Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Unlicensed Use of the 6 GHz Band	)	ET Docket No. 18-295
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183

REPLY COMMENTS OF THE ASSOCIATION OF GLOBAL AUTOMAKERS, INC.

The Association of Global Automakers, Inc.[1] ("Global Automakers"), through its attorneys, hereby offers reply comments on the Federal Communications Commission's ("FCC" or "Commission") *Notice of Proposed Rulemaking* ("*NPRM*") in the above-referenced proceeding in which the Commission proposes to modify its rules to expand unlicensed use of the 5.925-7.125 GHz ("6 GHz") band.[2]

Global Automakers agrees with the Commission that the 6 GHz band presents opportunities for unlicensed use, and maintains that the 6 GHz band would be better suited for such use than the adjacent 5.850-5.925 GHz ("5.9 GHz") band, which currently is allocated exclusively for transformative, life-saving vehicle-to-everything ("V2X") communications services. However, it is essential that V2X services be protected from harmful interference from unlicensed transmissions in the 6 GHz band. As the record makes clear, to ensure adequate protection of V2X services, the Commission should: (1) adopted the proposed out-of-band

[1] The Association of Global Automakers is a trade association based in Washington, D.C. that represents the U.S. operations of international motor vehicle manufacturers, original equipment suppliers, and other automotive-related companies and trade associations.

[2] *Unlicensed Use of the 6 GHz Band*, Notice of Proposed Rulemaking, ET Docket No. 18-295, GN Docket No. 17-183, FCC 18-147 (2018).

emissions ("OOBE") limit of -27 dBm/MHz; and (2) limit operations in the 5.925-6.425 GHz ("U-NII-5") band to indoor operations. Global Automakers joins commenters who advocated for these proposals, and encourages the Commission to adopt them.

I. THE 6 GHZ BAND IS BETTER SUITED FOR UNLICENSED USE THAN THE 5.9 GHZ BAND.

The 5.9 GHz band has long been allocated to intelligent transportation system ("ITS") services, in light of the ability of such services to "increase traveler safety, reduce fuel consumption and pollution, and continue to advance the nation's economy."[3] By exchanging real-time safety data between vehicles and other vehicles, roadway infrastructure, and even pedestrians, V2X technology does not just mitigate crash harms like safety belts or airbags – it can help prevent crashes from occurring. With recognition of V2X deployments already underway in the 5.9 GHz band, Global Automakers is supportive of recent announcements that seek to broaden the deployment of V2X applications, including through the use of Dedicated Short Range Communications ("DSRC") and Cellular V2X ("C-V2X").[4] As Global Automakers has previously explained, "[b]oth V2X technologies further may be leveraged to support an expanded auto safety application ecosystem and to serve other public interest objectives" beyond crash

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[3] *Amendment of Parts 2 & 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Serv. for Dedicated Short Range Commc'ns of Intelligent Transportation Servs.*, Report and Order, 14 FCC Rcd 18221, ¶ 5 (1999).

[4] *See, e.g.*, Letter from Kirk. T. Steudle, Director, Michigan Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 13-49, at 2 (May 24, 2018) (explaining that recent V2X infrastructure deployment includes deployment "in 26 states and cities in response to the American Association of State Highway Transportation Officials '[Signal Phase & Timing] Deployment Challenge"); Letter from Paul Hemmersbaugh, Chief Counsel and Policy Director, Transportation as a Service, GM to FCC Secretary Marlene H. Dortch, ET Docket No. 13-49, at 1 (July 13, 2018) (announcing GM's plans to offer vehicle-to-everything communications in a high-volume Cadillac crossover by 2023 and subsequently extend this technology to the entire Cadillac portfolio); Press Release, "Toyota and Lexus to Launch Technology to Connect Vehicles and Infrastructure in U.S. in 2021" (Apr. 16, 2018), http://corporatenews.pressroom.toyota.com/releases/toyota+and+lexus+to+launch+technology+connect+vehicles+in frastructure+in+u+s+2021.htm; Don Butler, Executive Director, Ford Connected Vehicle Platform and Product, Ford Motor Company, "How 'Talking' and 'Listening' Vehicles Could Make Roads Safer, Cities Better," (Jan. 7, 2019), https://medium.com/@ford/how-talking-and-listening-vehicles-could-make-roads-safer-cities-better-f215c68f376f.

avoidance, including "increasing mobility, decreasing congestion, improving fuel efficiency, and reducing emissions."[5]

The current level of V2X deployment, as well as recent announcements by major OEMs, already highlights the need to preserve the entire 5.9 GHz band for these life-saving services. Indeed, the entire auto ecosystem, including the U.S. Department of Transportation ("DOT"), has unified in its position that the entire 5.9 GHz band – all seven channels – must be preserved for V2X auto safety services.[6] The Commission, meanwhile, is currently undertaking rigorous testing to determine whether the 5.9 GHz band could be shared with unlicensed users while avoiding harmful interference to safety-of-life applications.[7] Although the results of the first phase of the three-phase test plan indicates that there may be a technically feasible mechanism for sharing the 5.9 GHz band between V2X and unlicensed operations, significant testing under real-world conditions is necessary before any such sharing can occur.[8] Global Automakers encourages the Commission to engage with DOT and the National Highway Traffic Safety Administration

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[5] Comments of Global Automakers, Inc., GN Docket No. 18-357 (Feb. 7, 2019) (commenting on 5GAA's petition for waiver to enable C-V2X deployment in the 5.9 GHz band).

[6] *See* Press Release, Alliance of Automobile Manufacturers, Association of Global Automakers, The Intelligent Transportation Society of America, The 5G Automotive Association, The American Association of State Highway and Transportation Officials, American Trucking Associations and The Motor & Equipment Manufacturers Association, "Multi-stakeholder Statement on Preserving the 5.9 GHz Band" (Oct. 24, 2018), https://autoalliance.org/2018/10/24/multi-stakeholder-statement-preserving-5-9ghz-band/ (explaining that the auto industry is "on the cusp of a major breakthrough in vehicle connectivity and safety innovations" and that "[t]he entire 5.9 GHz band is needed to achieve the full benefit of these communication technologies in the years to come"); Press Release, National Highway Traffic Safety Administration, "Statement on Safety Value of 5.9 GHz Spectrum" (Oct. 24, 2018) (explaining that "[t]he automotive industry and municipalities are already deploying V2X technology and actively utilizing all seven channels of the 5.9 GHz band and, accordingly, "[p]reserving the 5.9 GHz band for transportation communications is essential to public safety today and in the future").

[7] *See Commission Seeks to Update and Refresh the Record in the "Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band" Proceeding*, Public Notice, 31 FCC Rcd 6130 (2016); *Office of Engineering and Technology Announces Schedule for Testing Prototype U-NII-4 Devices*, Public Notice, 31 FCC Rcd 10518 (2016); *Office of Engineering and Technology Requests Comment on Phase I Testing of Prototype U-NII-4 Devices*, Public Notice, ET Docket No. 13-49, DA 18-1111 (2018).

[8] *See* Comments of Global Automakers, Inc., ET Docket No. 13-49, at 5-9 (Nov. 28, 2018) (describing the extensive testing required to validate or disprove the results of the Phase I laboratory testing of prototype Unlicensed National Information Infrastructure ("U-NII") devices).

("NHTSA") as it continues with the next two phases of the test plan, and reiterates the importance of data-driven policymaking for safety-of-life vehicular communications services.[9]

The 6 GHz band presents a better path forward for new unlicensed use than the 5.9 GHz band. As 5GAA rightly explains in this proceeding, "[i]n light of the near-term opportunities for opening an unprecedented amount of unlicensed mid-band spectrum in the 6 GHz band, the limited spectrum available for unlicensed use at 5.9 GHz, and the practical limitations that will have to be imposed on any potential unlicensed operations in the 5.9 GHz band, the Commission should focus on the 6 GHz band for additional unlicensed spectrum"[10] instead of the 5.9 GHz band. Global Automakers agrees with 5GAA that this approach "will achieve the twin goals of freeing up spectrum for unlicensed use and preserving the 5.9 GHz band" for V2X and other ITS services.[11]

II. TO ADEQUATELY PROTECT V2X SERVICES, THE COMMISSION SHOULD ADOPT THE OOBE LIMIT PROPOSED IN THE NPRM AND THE OPERATIONAL RESTRICTION PROPOSED BY OTHER COMMENTERS.

Given the life-saving value of V2X services and the importance of reliability of these services, it is essential that 5.9 GHz operations are adequately protected from unlicensed operations in the adjacent 6 GHz band. To this end, and as supported by the record, if the Commission moves forward with its proposal to expand unlicensed use of the 6 GHz band, it should: (1) adopt the OOBE limits proposed in the *NPRM*; and (2) restrict operations in the U-NII-5 band to indoor use.

In the *NPRM*, the Commission proposes an OOBE limit of -27 dBm/MHz for all unlicensed devices operating in the 6 GHz band.[12] The *NPRM* observes that such a limit is consistent with

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9 *See id.* at 1.

10 Comments of the 5G Automotive Association, ET Docket No. 18-295, GN Docket No. 17-183, at 3 (Feb. 15, 2019) ("5GAA Comments").

11 *Id.*

12 NPRM ¶ 82.

rules governing U-NII operations in other frequency bands and "ha[s] been successful in preventing harmful interference to services operating in adjacent bands."[13] Both 5GAA and Qualcomm, which each have experience with V2X services and transmissions in the 5.9 GHz band, support adopting this OOBE limit.[14] Global Automakers joins these commenters and urges the Commission to adopt this proposal.

However, as both 5GAA and Qualcomm recognize, the OOBE limit standing alone will not adequately protect V2X operations in the 5.9 GHz band. As 5GAA observes, "the proposed OOBE limit of -27 dBm/MHz for 6 GHz unlicensed signals would allow unwanted signals in the ITS band at a signal strength of -85 dBm/MHz, assuming free-space path loss at a range of 3 meters."[15] Qualcomm further explains that "OOBE from outdoor unlicensed operations in the lower portion of the proposed U-NII-5 band," specifically, could "significantly degrade ITS safety-of-life operations."[16] Accordingly, both commenters proposed limiting to indoor-only operation unlicensed operations in the U-NII-5 band that use a channel with a center frequency below 5925 MHz + BW*3/2 (where BW equals the bandwidth of the channel). Global Automakers agrees with these commenters' technical conclusions about the possibility of harmful interference to operations in the 5.9 GHz band, and agrees with their proposed solution.

III. CONCLUSION

Global Automakers respectfully urges the Commission to adopt final rules regarding unlicensed use of the 6 GHz band consistent with the reply comments provided herein.

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13 *Id.*

14 5GAA Comments at 5, Comments of Qualcomm Incorporated, ET Docket No. 18-295, GN Docket No. 17-183, at 12, 14-15 (Feb. 15, 2019) ("Qualcomm Comments").

15 5GAA Comments at 5.

16 Qualcomm Comments at 14.

Respectfully Submitted,

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